

Exhibit “C”

William Vigilante, Jr., Ph.D.

9

1 Q. Human factors?

2 A. Yes.

3 Q. what do you describe as human
4 factors?

5 A. Basically human factors are
6 ergonomics, which is a synonym, is a science
7 that studies how people interact with their
8 use of all different types of products,
9 machines, systems and environments.

10 And what we're interested from
11 the human factors side is the person that's
12 using the products. We're interested in their
13 perceptual abilities, that is their ability to
14 see, hear and capture information from the
15 environment, how they process that information
16 and make decisions. How things such as
17 expectancies and prior experiences affect how
18 we perceive things and how we make decisions.

19 We are also interested in
20 people's physical abilities and limitations.
21 For example, strengths and weaknesses, ability
22 to lift, range of motion, sizings of people,
23 human gait or ability to walk, run, so forth.

24 And then we as a field in a

William Vigilante, Jr., Ph.D.

10

1 professional's work with engineers, designers
2 and architects design products, machines and
3 systems that are easy to use, that are
4 efficient to use and most importantly are safe
5 to use.

6 Q. Do you work in any capacity
7 other than forensics? Do you know what I mean
8 by that?

9 A. Sure. I do traditional
10 consulting work at times.

11 Q. What percentage of your work is
12 what you refer to as traditional consulting
13 work?

14 A. Traditionally it's been a small
15 percentage, anywhere from five to 10 percent.
16 At some points of the year it's zero percent.

17 Q. When you say percentage, are
18 you talking about percentage of the income you
19 create from it, or are you talking about the
20 percentage of projects?

21 A. I think they're probably
22 positively correlated, so both.

23 Q. What percentage of your work do
24 you do for Plaintiffs? And when I say

William Vigilante, Jr., Ph.D.

78

1 second.

2 - - -

3 (Whereupon, a discussion was held off
4 the record.)

5 - - -

6 BY MR. HEINOLD:

7 Q. The warning that you cite in
8 the manual you talk about Mr. Yeldham's
9 testimony and you talk about Mr. Zazula's
10 report in the next paragraph.

11 A. Okay.

12 Q. Now, I had asked you about the
13 scope of your expertise as a motorcycle design
14 expert, you said -- your counsel said you're
15 going to be sticking within your report.

16 Are your references here to
17 those things references to the need for a
18 warning as compared to a criticism of the
19 design other than a warning?

20 A. Yes. So my opinions are
21 both. So the need for a warning is dependent
22 upon the design choice that BMW made or BMW
23 North America made. So you can't have
24 opinions with respect to warnings without

William Vigilante, Jr., Ph.D.

79

1 understanding the design decisions and choices
2 that were available or made.

3 Q. Okay. Well, I understand, for
4 example, the product hierarchy, there is a
5 design and you should try to design out the
6 hazard. If you can't, then you offer a
7 warning. They're two separate issues.

8 A. Well, they're not separate
9 issues.

10 Q. Well, let me just finish. I
11 understand that the design issue is a
12 predicate for the warning, right?

13 A. Yes. So the design of the BMW
14 creates a potential for a hazardous situation,
15 that is the potential for fire. There was
16 choices that BMW made in the design of the
17 bike that could have eliminated that
18 potential. They chose not to. If they're
19 going to not eliminate through design, they
20 have the option of safeguarding it.

21 I think that Mike Zazula
22 addressed some of those issues guarding it
23 with the use of the optional police fan kit.
24 I don't recall offhand if he had an issue with

William Vigilante, Jr., Ph.D.

80

1 respect to the monitoring of the engine
2 temperature, potential shutting it down if it
3 got too hot. But certainly, those are
4 guarding solutions that were available to BMW
5 to my understanding and they chose not to do
6 that.

7 And then so they relied upon a
8 warning as their mitigation strategy. And my
9 opinion is that reliance on that warning was
10 inappropriate in that the warning they
11 provided was inadequate. And that if they
12 were going to rely upon the warning, solely
13 upon the warning, they needed to provide it on
14 the motorcycle itself like they did with the
15 recall motorcycle a few years prior because of
16 the unique characteristic of the potential
17 fire hazard with the design of this bike.

18 Q. I understand that. My question
19 is: Are you going to criticize the design as
20 a design? Are you going to say the
21 motorcycle -- forget the warnings. Are you
22 going to say I'm the motorcycle expert and
23 this motorcycle is defective because it had a
24 sight glass in this location and I'm offering

William Vigilante, Jr., Ph.D.

81

1 an alternative?

2 A. No. My opinion is that because
3 of the way they designed it, they created a
4 potential fire hazard, and as such they had a
5 responsibility to mitigate that, and they
6 could have mitigated it through design or
7 guarding. If they weren't doing to do that,
8 they should have at least provide adequate
9 warning, and the warning that they did chose
10 to provide was inappropriate and inadequate.

11 Q. Are you offering an opinion
12 that the design of the motorcycle beyond the
13 warning is defective and unsafe?

14 A. I think that they were --
15 excuse me, I think that they already
16 established that. I'm not establishing the
17 fact that oil sight glass or its position in
18 its composition failed meeting to a
19 catastrophic event. That's why I'm citing
20 Mark Yeldham, his testimony, to establish
21 that.

22 So I'm not planning on
23 establishing that on my own. I'm using his
24 testimony to establish that there was a hazard

William Vigilante, Jr., Ph.D.

82

1 due to the design of this bike.

2 Q. Okay.

3 MR. HEINOLD: Ken, do you
4 understand my question?

5 MR. LEVINE: I do. I think
6 that you're asking him to disconnect
7 something -- let me start off, you can keep
8 this on the record. Inevitably he has to say
9 that the design resulted in a hazard. I don't
10 think that he is opining that personally other
11 than through the acceptance of statements by
12 folks at BMW and other experts that such a
13 hazard simply exists based on it.

14 I don't think he's going to
15 come in, and correct me if I'm wrong, and
16 testify that the design in and of itself
17 should have been different. But he will say
18 the obvious, which he's already stated, that
19 if it did not have that design it would not
20 have that hazard.

21 So you're asking him is he an
22 expert in that area?

23 MR. HEINOLD: See, I don't know
24 that I can agree with your last statement.

William Vigilante, Jr., Ph.D.

83

1 MR. LEVINE: Oh, okay.

2 MR. HEINOLD: I'm with you a
3 hundred percent. There's a warning that says
4 here's a hazard, don't do this, and that's
5 what we're here about.

6 But your last statement that
7 he's going to say if you had a different
8 design you wouldn't have the hazard, he
9 doesn't have that in his report. And if you
10 are going to declare him to be a motorcycle
11 design expert, then we'll see if he
12 qualifies. But that is the next step.

13 MR. LEVINE: The part that you
14 don't agree with me on, let me just address
15 that just for a second, I'm rather confident
16 that your own client who designed the bike
17 would say that if designed differently, as
18 some other vehicles are designed, that that
19 precise hazard would not exist. It's just a
20 nature of the design of that particular bike.

21 So I don't think it requires
22 him to be an expert, although he probably has
23 enough of that expertise to say that
24 statement, that if it was designed differently

William Vigilante, Jr., Ph.D.

84

1 it would not have that hazard. I doubt your
2 client or you when you pause for a second
3 would disagree with that statement. So that's
4 all that he would be saying, I believe, and he
5 can answer for himself.

6 So when you say is he a
7 motorcycle expert as to the design or whether
8 or not the design generated that hazard, I
9 believe that everybody involved knows that the
10 design generated that hazard. So I'm not
11 sure -- I'll be happy to continue.

12 MR. HEINOLD: I will say this,
13 I don't disagree with you that it has a design
14 and that design can lead to the consequences
15 of a fire if you leave it idling at
16 standstill, because there's a hazard
17 recognized and a warning in the manual to that
18 effect.

19 MR. LEVINE: Then a safety
20 engineer or an ergonomic expert will
21 inevitably say every single time you've got
22 this hazard that I've been asked to address,
23 but that integral with that opinion is the
24 straightforward statement that if it had been

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85

1 designed differently, it's not the case with
2 all products, but if it was designed
3 differently it would not have that hazard.

4 MR. HEINOLD: And what's the
5 different design he's going to say it should
6 be?

7 MR. LEVINE: Oh, he's not going
8 to say it should be because there's six
9 million ways to build a motorcycle, and some
10 of them will have that hazard, some of them
11 will not have that hazard based on their
12 design.

13 I think that -- again, I
14 welcome his contribution to the conversation,
15 but I think his opinion is that when a
16 motorcycle is designed in this fashion, if the
17 manufacturer chooses to allow this hazard to
18 exist, because the nature of the design of
19 this motorcycle, not unlike every other
20 motorcycle, but the design of this type of
21 motorcycle generates this hazard, and once
22 they decided to have that design, which would
23 generate this known hazard, then they must do
24 X, Y and Z, but they are not guiltless --

William Vigilante, Jr., Ph.D.

86

1 that's a horrible lawyer word that I'm using.
2 They're not guiltless deciding, all right,
3 we're going to design it to allow this hazard
4 to exist.

5 MR. HEINOLD: You have an
6 expert who has addressed the design issues.

7 MR. LEVINE: Yes, we have.

8 MR. HEINOLD: And this witness
9 has addressed the warning issues given the
10 design.

11 MR. LEVINE: You have just
12 limited, frankly, the scope of his testimony.
13 He was asked to analyze the safety. You want
14 to say he was asked to analyze the warning. I
15 think any ergonomic expert is going to be
16 asked to analyze the safety. Integral to that
17 is a review as to the hazard and what causes
18 them, first and foremost, and that inevitably
19 goes back to the design.

20 So it would be impossible for
21 him to say I'm analyzing the safety that led
22 to fire, that he did not look at the design,
23 the design options and whether or not they
24 created a hazard. I don't -- you can ask him

William Vigilante, Jr., Ph.D.

87

1 if he has opinions with regard to other
2 designs that would not generate the hazard.

3 You can ask him whatever
4 questions you'd like to ask him. I've tried
5 to answer I think the conflict between you as
6 best I can.

7 MR. HEINOLD: Well, I think
8 your position tries to turn him into a design
9 expert, which he doesn't have in his report.

10 MR. LEVINE: I think the scope
11 of his opinions that he will say at trial with
12 regard to design and hazard generation as a
13 result of this design are stated in his
14 opinion and will be the testimony at the time
15 of trial.

16 But if you want to explore
17 that, if you feel as if he's going to give
18 testimony at trial beyond the scope of his
19 abilities or the scope of his report, I
20 certainly appreciate that, and an issue will
21 arise that we're going to have to address.
22 But I think that your questions may eliminate
23 that concern.

24 BY MR. HEINOLD:

William Vigilante, Jr., Ph.D.

88

1 Q. Do you consider yourself a
2 motorcycle design expert?

3 A. It depends on the specific
4 topic.

5 Q. How about on the location of
6 sight glasses, are you an expert in the
7 location and use of sight glasses for oil
8 systems?

9 A. It depends on the question. So
10 maybe I can short circuit this. I do not plan
11 on providing an alternative design solution.
12 So I would leave that to Zazula and Yeldham
13 and anybody else that testifies.

14 My opinion is simply that it's
15 my understanding that bikes that are designed
16 differently don't have this hazard. If you're
17 going to choose this design that creates this
18 hazard you need to A, accept that you're doing
19 it, and then B, think about providing a
20 different design.

21 If you can't provide a
22 different design for whatever reason, you have
23 to decide whether or not you're going to
24 provide a safeguard to prevent the hazard from

William Vigilante, Jr., Ph.D.

89

1 occurring that is inherit in your design. And
2 if you're not going to do that, then you need
3 to provide an adequate warning.

4 My opinion is that instead of
5 providing a design that doesn't create the
6 hazard, BMW, for whatever reason, I don't know
7 for whatever reason, given the hazard, chose
8 to leave it in the design of the bike. They
9 didn't provide a safeguard to prevent the
10 hazard from occurring.

11 It would be my opinion if asked
12 that it's unreasonable if the safeguard is
13 available and feasible, I didn't do the
14 analysis of what they should be, that's for
15 Mike Zazula to determine, but my opinion is
16 simply that if it's available and it's
17 feasible, it should have been used rather than
18 relying upon a third option. If they have a
19 hazard because of the design and they're not
20 going to safeguard it, the least they can do
21 is provide adequate warning.

22 My opinion in this case is that
23 they failed to provide adequate warning. If
24 they're going to solely on the warning, what

William Vigilante, Jr., Ph.D.

90

1 they needed to do was to put it on the bike
2 like they did in the recall back in the early
3 models.

4 Q. So if I understand what you're
5 saying, you're not going to offer any type of
6 alternate design; correct?

7 A. I'm not planning on offering
8 alternative design.

9 Q. You're not planning on
10 criticizing any specific aspect of this
11 design?

12 A. The only thing I would limit my
13 opinion to or plan on providing an opinion is
14 that I've given alternative designs, they
15 should have been the first choice of
16 manufacturers as opposed to choosing a design
17 they had an inherent hazard.

18 Q. But that's going to be a
19 general statement --

20 A. Yes.

21 Q. -- about this motorcycle has
22 features and characteristics that lead to a
23 hazard that the Owner's Manual addresses;
24 correct?

William Vigilante, Jr., Ph.D.

91

1 A. The Owner Manual does attempt
2 to address it.

3 Q. Okay. I'm not trying to say
4 there isn't a hazard. I'm acknowledging that
5 what has been said about what can occur if the
6 operator does certain things can occur, and
7 there's a warning about that. I'm not arguing
8 the merits of the warning. I'm saying it's
9 there, so therefore the characteristic is
10 known.

11 You're going to say, as I
12 understand it, that if you have that
13 characteristic the first thing you should do
14 is --

15 MR. LEVINE: Consider.

16 BY MR. HEINOLD:

17 Q. -- to consider is to have a
18 design that doesn't present that
19 characteristic. That you're going to leave
20 that fight to other experts; correct?

21 A. Yes, I'm going to leave -- I'm
22 not offering a design solution. But the
23 problem is that the design of the bike is
24 unique in that it creates a fire hazard that

William Vigilante, Jr., Ph.D.

92

1 doesn't exist on other types of bikes. And it
2 exists because of the design of the bike.

3 whether it's the location
4 and/or the material or the manner in which the
5 oil sight glass was manufactured and mounted,
6 I don't know whether it's one or the other or
7 a combination of all three. But the design of
8 this bike creates a unique hazard to this bike
9 that does not occur or exist in my
10 Harley-Davidson, does not occur or exist in
11 the Yamaha bike that Mr. Yazdani had for 20
12 years prior to the BMW.

13 Q. Is that opinion -- or excuse
14 me, in that statement are you planning to talk
15 about the specifics of the design in saying
16 the characteristics of this bike create a
17 hazard of fire? Are you going to say and
18 here's what they are?

19 A. I'm going to say that Mr.
20 Yeldham testified that the design of this bike
21 and the designed oil sight glass creates a
22 fire hazard.

23 Q. I don't think he testified as
24 to that.

William Vigilante, Jr., Ph.D.

93

1 A. Sure he did.

2 Q. what did he say?

3 A. Mr. Yeldham testified that if
4 BMW R 1150 R motorcycle is left idling in a
5 stationary position the oil sight glass cover
6 can fail and cause a fire.

7 Q. That's the extent of what
8 you're going to talk about there?

9 A. I mean, he goes on. I'm citing
10 the rest of that paragraph as to why this is a
11 problem. I mean, he's acknowledging in that
12 testimony that there is a hazard associated
13 with the oil sight glass cover. And if you
14 don't have the oil sight glass cover it can't
15 fail, and if you have a dipstick you don't
16 have an oil sight glass cover. And therefore,
17 from the oil sight glass cover can't fail.

18 Q. Okay. So are you going to
19 offer an opinion about it should have had a
20 dipstick?

21 A. No, I am not, but my opinions
22 because of the unique characteristics of this
23 bike users don't understand or appreciate it
24 because it's abnormal, atypical due to the

William Vigilante, Jr., Ph.D.

94

1 unique or due to the design of this bike.

2 Q. Is there anything else that you
3 consider abnormal or unique?

4 A. Other than the fact that the
5 oil sight glass cover can fail and cause a
6 fire, that's the only thing that's relevant to
7 this incident.

8 Q. Are you aware of any --

9 A. well, I take that back, because
10 apparently to prevent the fire due to the
11 design BMW wants you to ride away immediately
12 and that, again, is a unique or atypical trait
13 associated with this bike.

14 Q. Anything else?

15 A. Not that I can think of at the
16 moment.

17 Q. Have you done a survey on
18 motorcycles?

19 A. I've not surveyed every
20 motorcycle ever available, but I've looked at
21 a lot of bikes over a lot of years and most of
22 them have dipsticks.

23 Q. Any that don't other than BMW?

24 A. well, the Yamaha has an oil

William Vigilante, Jr., Ph.D.

95

1 sight glass, but it's on the right side of the
2 crank case that when it's on its left
3 kickstand the oil isn't covering the oil sight
4 glass.

5 And Mark Yeldham testified that
6 part of the reason why the oil sight glass may
7 fail is because when its on its left kickstand
8 the oil, hot oil covers the oil sight glass.
9 So to me intuitively that means that if it's
10 on the right side and it's not covering the
11 oil sight glass it can't cause it to fail in
12 that manner.

13 Q. Are you planning to offer the
14 opinion that the oil sight glass on this
15 motorcycle should have been on the right side,
16 not the left?

17 A. I do not plan on providing an
18 alternative design to this bike.

19 Q. And I think we've already
20 agree, but I want to be clear, you're not
21 planning on design that says there should be a
22 dipstick instead of an oil sight glass?

23 A. I was not planning on offering
24 an opinion with respect to alternative design.

William Vigilante, Jr., Ph.D.

96

1 MR. LEVINE: I'm compelled to
2 step in. He has said a number of times that
3 he does not intend to present alternative
4 design. I just want to clarify that in one
5 way. Some people view warnings provided on a
6 product as an alternative design. I just
7 wanted to mention that so there's no lack of
8 clarity.

9 And I would ask that we pause
10 so I can go do and get those menus.

11 MR. HEINOLD: Can I just finish
12 this?

13 MR. LEVINE: Sure.

14 MR. HEINOLD: And I understand
15 what you say about the warning issuing
16 wasn't -- that's not a problem. I didn't take
17 it that way.

18 MR. LEVINE: Okay.

19 MR. HEINOLD: We do have a
20 report full of --

21 MR. LEVINE: Of warning
22 issues.

23 MR. HEINOLD: Of warning
24 issues.

William Vigilante, Jr., Ph.D.

157

1 Instruction Manual to mitigate the design
2 defect with the motorcycle, it's inappropriate
3 and it leads to long manuals.

4 So if they had fixed it from
5 the beginning or provided an adequate
6 safeguard, there wouldn't be a need to add it
7 to the manual, maybe cut a page-and-a-half out
8 of it.

9 Q. So human factors experts have
10 no role in the length of the modern day
11 manual?

12 A. Maybe litigation attorneys.
13 Human factors experts would say fix the
14 design, provide the safeguard, do not rely
15 upon a warning. Particularly they would say
16 do not rely upon a warning in a manual.

17 As a human factors professional
18 my preference is to fix the design. When I
19 worked for the IBM Corporation I worked with
20 the engineers to fix the design before we
21 relied upon a warning in a manual around the
22 product. Eliminating it through design is
23 always the first and best option. Providing a
24 guard is the second and second best option.

William Vigilante, Jr., Ph.D.

204

1 here, would this capture your attention? You
2 can mock it up with Styro-foam if you have,
3 physically place the warnings where you think
4 that they're relevant or should be placed and
5 have the users conduct tasks and determine
6 whether or not they're seeing them, reading
7 them, understanding them and complying with
8 them.

9 As you get farther along in
10 developing, you can actually take the
11 motorcycle and have alternative places where
12 you're going to test to determine what works
13 and what doesn't work. This is all empirical
14 testing.

15 Q. If somebody was to come in this
16 case and say we need 25 labels, and that's too
17 many because it will create clutter, what
18 would you have to do to say no, they're wrong,
19 in terms of creating clutter?

20 MR. LEVINE: Can I interrupt
21 for one second just so I understand. Do you
22 mean 25 in one place or 25 all over the
23 product?

24 MR. HEINOLD: All over the

William Vigilante, Jr., Ph.D.

205

1 product.

2 THE WITNESS: First I would
3 want to know why they have that many. That
4 would be the absolute first question. I'd
5 want to know what was done to eliminate
6 through design, what was done to guard against
7 it. Then I would want to know the
8 prioritization that was given to each of the
9 warnings. Then I want to know were they
10 relevant to on the bike, when they're
11 relevant, where they're relevant.

12 So, for example, if it has
13 something to do with bleeding the brakes, for
14 example, the warning being placed on the gas
15 tank is probably not the appropriate place for
16 it. You would probably want it down on the
17 caliber. So it could be that when you get
18 done you can find the spots that are relevant
19 on the bike and place them specifically at
20 those spots and you decrease the issue of
21 clutter.

22 If they're all relevant to the
23 tank, the gas tank, let's say you've got 10
24 warnings that are related to the gas tank, I

William Vigilante, Jr., Ph.D.

206

1 don't see how that's possible, then you got to
2 look at whether or not they can be combined
3 into a single one.

4 I think the -- for example, the
5 Yamaha warning that you looked at earlier,
6 there was two different topics addressed in
7 the same warning, so that's a multi topic
8 warning. That's one way to reduce it. You
9 know, there's just multiple ways of doing it.

10 Q. So, if somebody said look, we
11 have made a determination that we need to put
12 20 stickers on the gas tank, what would you
13 have to do to say no, that would be clutter,
14 that would be too many?

15 A. Again, I would have to look at
16 what was done from a hazard analysis --

17 Q. You said all that. I'm
18 assuming you've done that. Now we've
19 concluded that there's 20 pieces of
20 information that need to be imparted in order
21 for us to feel as if our product is safe, but
22 we're concerned about clutter so we can't do
23 that, what would you have to do to determine
24 whether that would create clutter and be an

William Vigilante, Jr., Ph.D.

207

1 interference with the transmission of useful
2 safety information or not? Usability test?

3 A. Again, I can offer to do the
4 usability testing. I can look at it and do a
5 heuristic evaluation of it.

6 MR. LEVINE: A what?

7 THE WITNESS: Heuristic.

8 BY MR. HEINOLD:

9 Q. That's off the cuff?

10 A. I'm sorry?

11 Q. Is that like off the cuff?

12 A. No. It's done based on what
13 the professional knowledge and experience
14 looking at the standards, guidelines and
15 recommendations are from warning design,
16 seeing whether or not you can meet those. So
17 that's a certainly a way to do it.

18 But again, you've got a
19 hypothetical that is so outlandish that it
20 stretches the imagination in the realms of
21 possibility. If you have 20 different
22 warnings that had to go on the gas tank, you
23 know, my first inclination is that you can't
24 do it, that this is ridiculous. You shouldn't

William Vigilante, Jr., Ph.D.

208

1 have this many hazards associated with the gas
2 tank. what did you do differently or wrong
3 with your design that requires 20 different
4 warnings on the gas tank.

5 Q. so if I distill all this, you
6 would have to do a usability test to determine
7 whether that particular decision of 20
8 stickers on the gas tank would create clutter
9 or interfere with the transmission of safety
10 information because, as I understand, there's
11 no guideline that says anything more than five
12 is too many, you need to have five to seven,
13 you know, anything like that?

14 You would have to look at all
15 the other things you talked about to make that
16 kind of decision; is that right?

17 A. I would say you're incorrect.
18 For 20 different warnings on the gas tank, I
19 think I can safely look at that and say that
20 that would be inappropriate and inadequate.

21 Q. well, what -- that would be
22 your opinion, right?

23 A. That would be my learned
24 opinion based on my education, training and

1 experience.

2 Q. well, what would -- how about
3 five?

4 A. Again, I'd go through the same
5 process, determine why there's five that you
6 would have to put on.

7 Q. No, I got that process. I'm
8 talking about we reached that point.

9 See, here's my question --

10 A. Then I think --

11 Q. -- it's a simple one.

12 A. well, do I get to answer or do
13 I get interrupted again?

14 Q. Oh, you'll get interrupted
15 again if you keep giving the same answer,
16 non-answer.

17 A. I'm sorry, go ahead. You keep
18 asking the same question over and over again.

19 Q. You're right, I do. You keep
20 answering the same question. Here's the
21 problem, your answer isn't my question.

22 A. It depends on the situation.
23 I'd have to look at it and give you my
24 opinion.